**IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF TEXAS
MARSHALL DIVISION**

ACTIVE WIRELESS TECHNOLOGIES LLC,	§ § § §	Case No. 2:23-cv-00261-JRG
Plaintiff,	§ § §	**JURY TRIAL DEMANDED**
v.	§ §	
T-MOBILE USA, INC. and T-MOBILE US, INC.,	§ § §	
Defendants,	§ § §	
ERICSSON INC. and NOKIA OF AMERICA CORPORATION,	§ § §	
Intervenors.	§ §	

**ACTIVE WIRELESS TECHNOLOGIES LLC'S
OPENING CLAIM CONSTRUCTION BRIEF**

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I.   INTRODUCTION

Pursuant to P.R. 4-5(a) and the Court's First Amended Docket Control Order of June 14, 2024 (Dkt. 33), Plaintiff Active Wireless Technologies LLC ("AWT") hereby submits its Opening Claim Construction Brief. The asserted patents are U.S. Patent Nos. 10,531,443 (the "'443 Patent," Ex. A), 11,019,557 (the "'557 Patent," Ex. B), 10,785,764 (the "'764 Patent," Ex. C), and 10,601,566 (the "'566 Patent," Ex. D) (together, the "Asserted Patents"). This brief is supported by the expert Declaration of Mr. Regis (Bud) Bates. Ex. E, Declaration of Mr. Regis (Bud) Bates Regarding Claim Construction.

II.   CLAIM CONSTRUCTION STANDARD OF REVIEW

The governing legal standards relating to claim construction are described in the Court's opinion in *AGIS Software Dev., LLC v. Huawei Device USA Inc.*, No. 2:17-cv-513-JRG, 2018 WL 4908169, at *3-*5 (E.D. Tex. Oct. 10, 2018) and are hereby incorporated by reference. *See also Seoul Semiconductor Co. v. Nichia Corp.*, 596 F. Supp. 2d 1005 (E.D. Tex. 2009).

III.   LEVEL OF ORDINARY SKILL IN THE ART

For this case, the relevant time period for interpreting the claims of the Asserted Patents is June 15, 2017 for the '443 Patent, the date being the filing date of its provisional application No. 62/520,520; May 10, 2018 for the '557 Patent, the filing date of its provisional application No. 62/669,851; August 11, 2016 for the '764 Patent, the filing date of the earliest application, Chinese Patent Application 2016 1 0658544; and August 10, 2017 for the '566 Patent, the filing date of its provisional application No. 62/543,795.

Plaintiff proposes that the person of ordinary skill in the art ("POSITA") would have (1) a Bachelor of Science degree or equivalent degree in electrical engineering or computer science / engineering or software technologies and (2) at least two years of industry experience in wireless cellular communications, internet protocols, and/or communications networking technology. A

person could also have qualified as a POSITA with some combination of (1) more formal education (such as Master of Science degrees) and less technical experience, or (2) less formal education and more technical or professional experience in the fields listed above.

Plaintiff's expert, Mr. Regis (Bud) Bates is considered to be a POSITA at the time of the invention(s), and Mr. Bates has submitted an expert declaration regarding certain claim constructions from the viewpoint of a person of ordinary skill in the art. *See generally* Ex. E.

IV.   DISPUTED CLAIM TERMS

A.   '557 Patent

1.   Term 1: "a parameter associated with a condition for determination of a failure" (Claims 9, 13, '557 Patent")

AWT's Proposed Construction	Defendants'/Intervenors' Proposed Construction
Plain and ordinary meaning.	"a parameter used by the UE to determine that it has failed in the SI message acquisition process"

This limitation should be construed according to its plain and ordinary meaning. Defendants do not dispute whether the meaning of "a parameter" and "determination of a failure" should be subject to its plain and ordinary meaning since they use the same words "a parameter" and "determine that it has failed" in their proposed construction. Rather, Defendants' proposed construction of the term improperly reads the claimed "condition" out of the claim term, which a POSITA would understand as changing the meaning of the claim. Ex. E, § V, ¶ 32. "Claim constructions [should] give meaning to all of a claim's terms" but Defendants can provide no reasoning for reading out the "condition" language from this claim term. *See Apple, Inc. v. Ameranth, Inc.*, 842 F.3d 1229, 1237 (Fed. Cir. 2016) (citing *Merck & Co. v. Teva Pharms. USA, Inc.*, 395 F.3d 1364, 1372 (Fed. Cir. 2005)).

The '557 Patent specification supports Plaintiff's understanding that this term requires at least both a parameter and a condition for determination of failure. Ex. E, § V, ¶ 32. In particular, the overall claim language states that "the first type SIB [system information block] compris[es]:…a parameter associated with a condition for determination of a failure of an SI message acquisition process" and the specification describes "a configuration parameter to configure at least one termination condition for determination of a failure of an SI message acquisition process." *Id.* (citing Ex. B, 14:21-23, 19:37-45 ("the first type system information comprises (information elements or the like which indicate): availability of second type SI messages; scheduling information of each of the SI messages; a delivery mode for each of the second type SI messages; and, a configuration parameter to configure at least one termination condition for determination of a failure of an SI message acquisition process for the on-demand based second type SI messages."), 21:36-40 ("The first type system information comprises, e.g., configuration parameters to configure for at least one termination condition for determination of a failure of an SI message acquisition process."), 26:41-43, 27:10-12, 29:14-16, 29:62-64).

As shown in Figure 22, reproduced below, such "configuration parameters for at least one termination condition for determination of a failure of an SI message acquisition process" are included in the transmitted first type system information (SI) from the base station:

| TRANSMITTING FIRST TYPE SYSTEM INFORMATION (SI) FROM THE BASE STATION APPARATUS. INCLUDING CONFIGURATION PARAMETERS FOR AT LEAST ONE TERMINATION CONDITION FOR DETERMINATION OF A FAILURE OF AN SI MESSAGE ACQUISITION PROCESS | 22-1 |

| BROADCASTING THE PERIODIC BROADCAST-BASED SI MESSAGES | 22-2 |
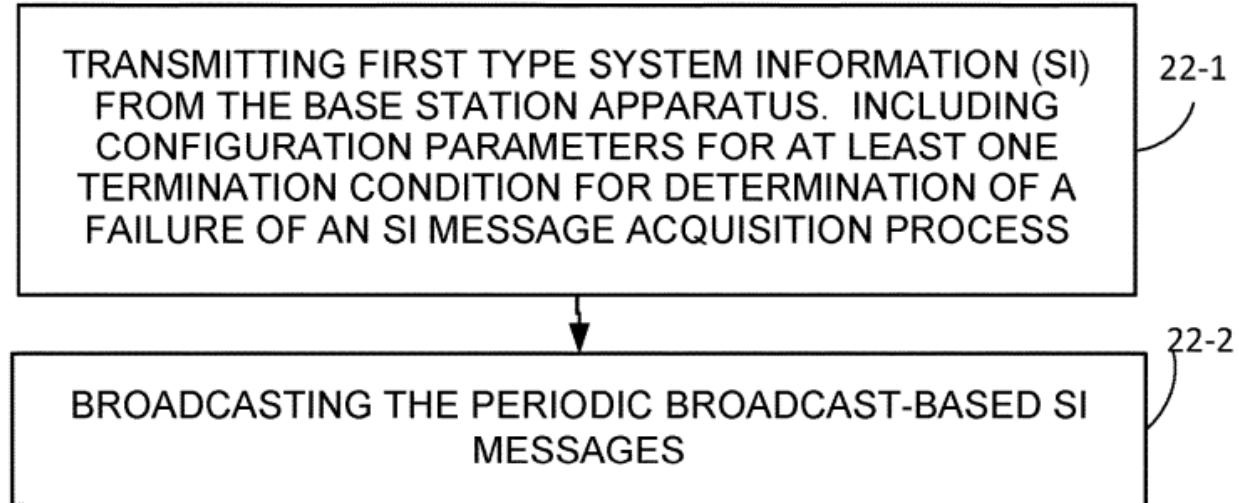
Fig. 22

Id., ¶ 33 (citing Ex. B, Fig. 22).

Specific "termination condition parameters" are disclosed in Figs. 13A-13D, which indicate that the parameters *are associated with conditions* and the parameters are not themselves directly or solely used to determine failure of an SI message acquisition process, as Defendants' proposed construction insinuates. *Id.*, ¶ 34 (citing Ex. B, 3:50-52 ("Figures 13A-13D are diagrammatic view of differing implementations of SIB1 which comprises termination condition parameters.")).

4
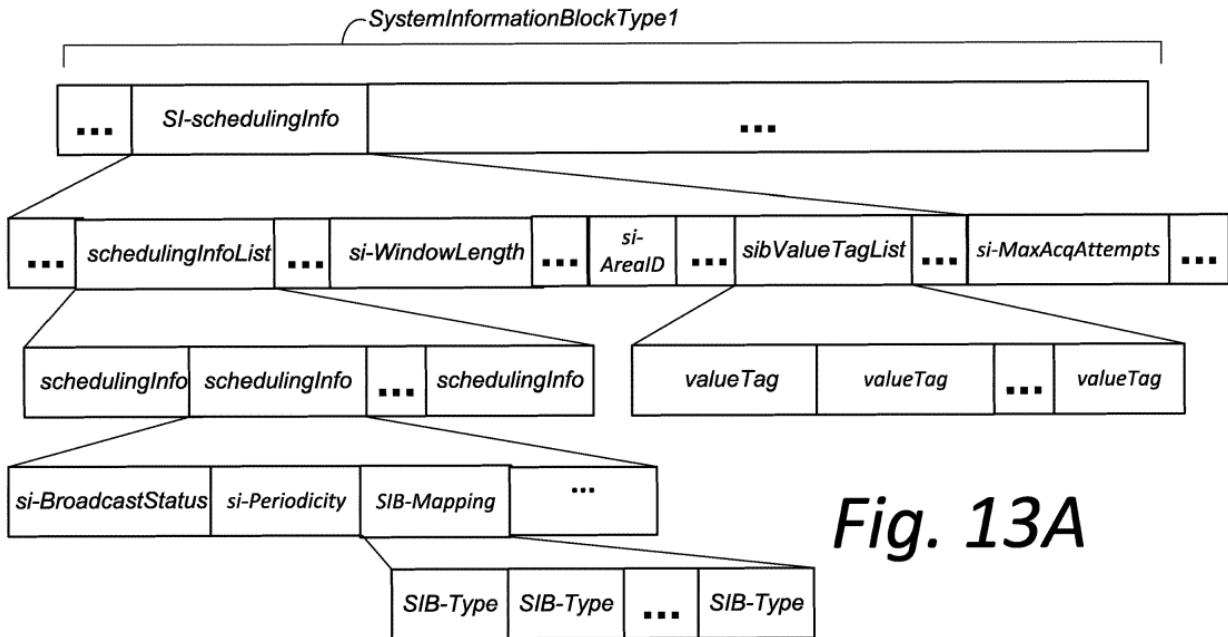
Id. (citing Ex. B, Fig. 13A).
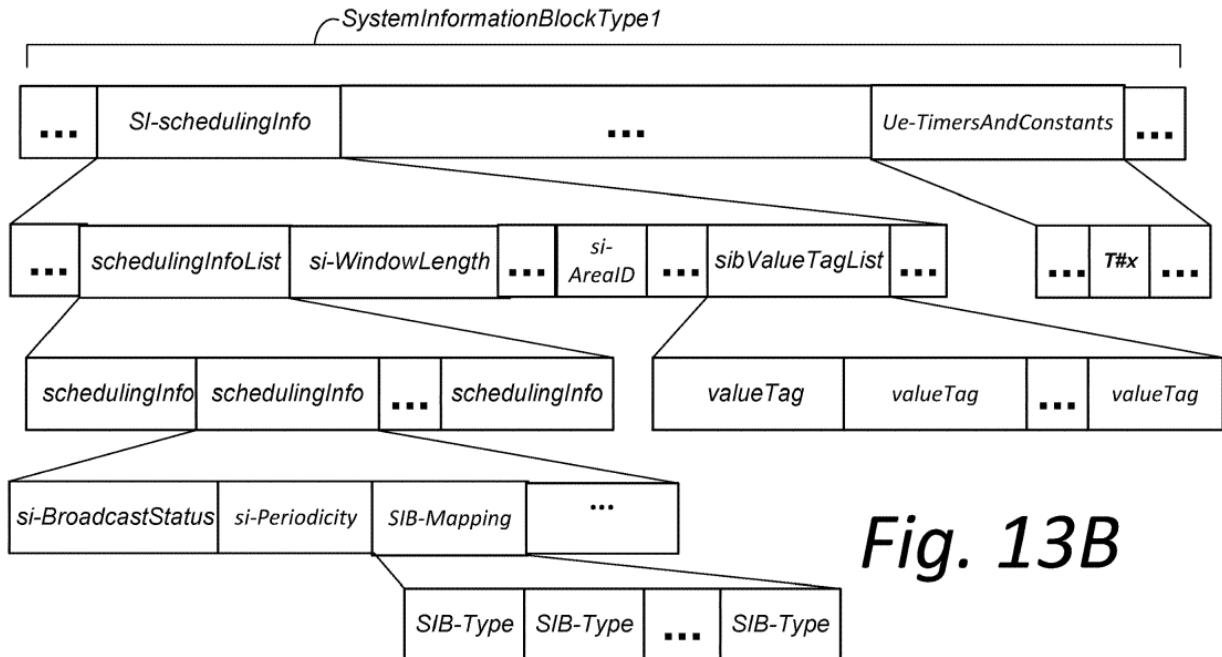
Id. (citing Ex. B, Fig. 13B).
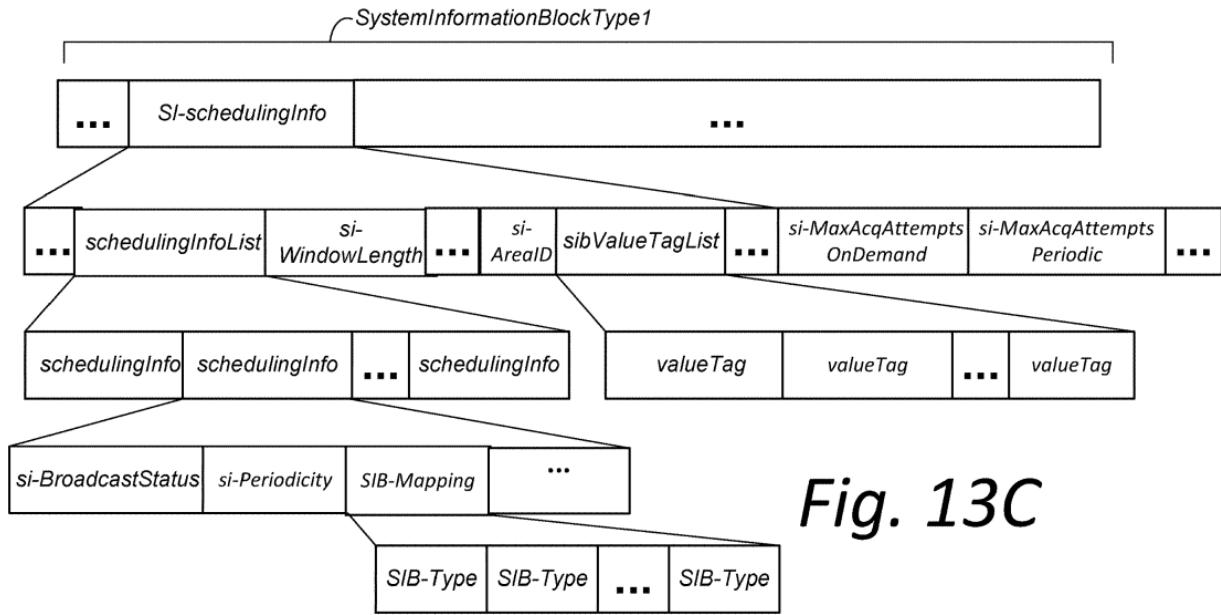
Fig. 13C

Id. (citing Ex. B, Fig. 13C).
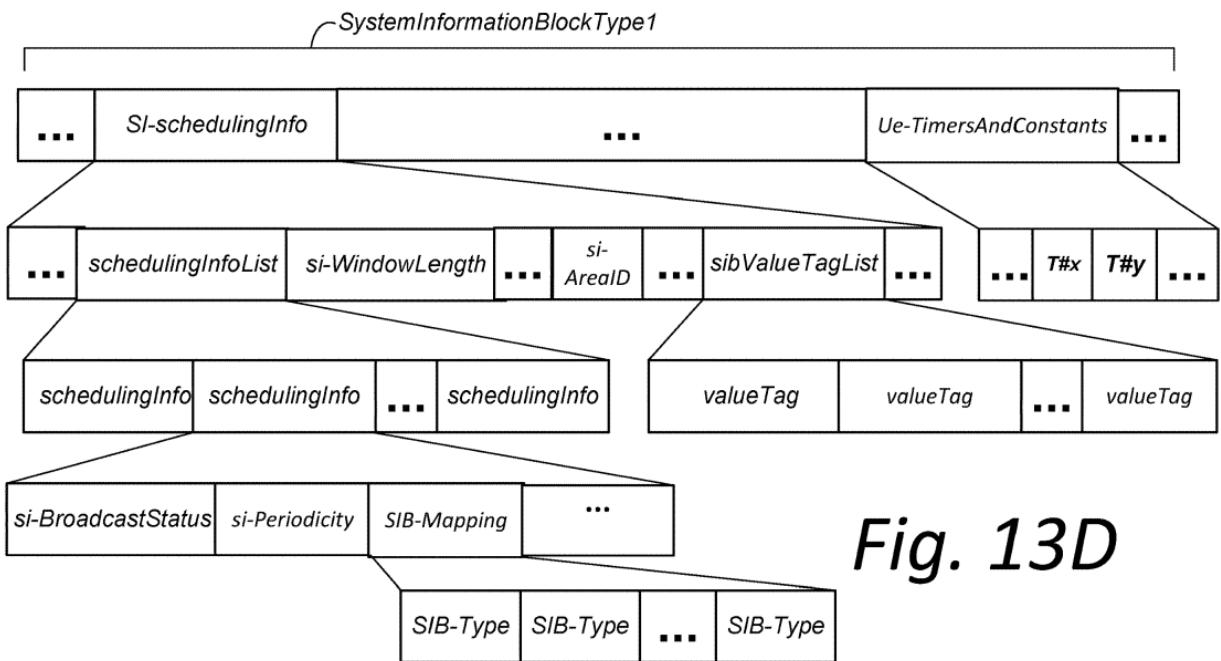
Fig. 13D

Id. (citing Ex. B, Fig. 13D).

Similarly, the specification contains a separate figure related to "different termination conditions for different SI messages," indicating that the parameters and the conditions themselves are associated but are otherwise two separate concepts:

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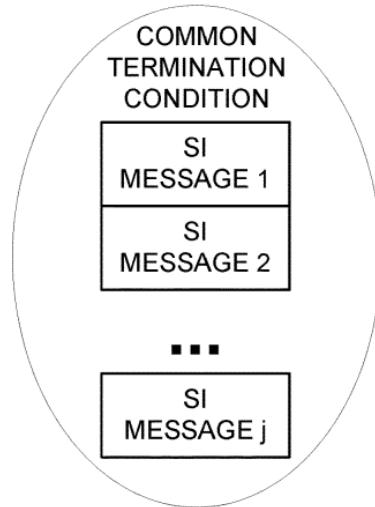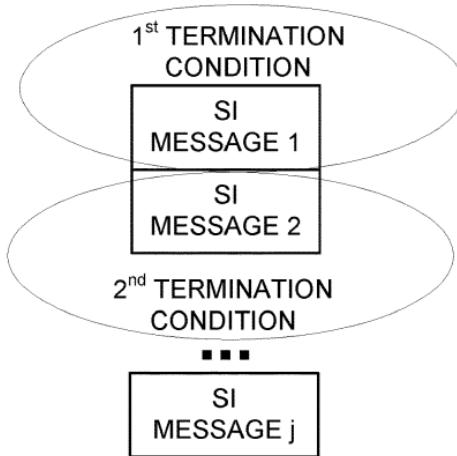
Fig. 18A   Fig. 18B

Id., ¶ 35 (citing Ex. B, Figs. 18A-18B, 4:3-6 ("FIG. 18A is a diagrammatic view showing a common termination condition for plural SI messages. FIG. 18B is a diagrammatic view showing different termination conditions for different SI messages.")).

Plaintiff's expert also testified, giving an example of how a POSITA would understand the distinction between the claimed parameter, condition, and determination of failure, as follows:

> Q. And it is your opinion, then, that a determination of a failure of an SI message acquisition process is something different than a condition, correct?
>
> A. Correct. The parameter tells us what the specification or what the rules are. The condition is what is occurring at this time. If, in fact, we exceed the number of counters or the timers or whatever, then a determination is made that we have had a failure. And at that point in time, we must rebroadcast.

Ex. F, Bates Dep., 56:9-20, July 16, 2024. Specifically, Mr. Bates testified that a POSITA would have understood that (i) parameters define or specify the rules; (ii) a condition is what is actually occurring (*i.e.*, the number of counters or timers); and (iii)for example, the claimed "parameter associated with a condition" may be whether a certain number of counters or timers are exceeded that would determine whether failure occurred. *Id.*

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Therefore, a POSITA reading the specification and the claims would understand that the claim requires a "condition for determination of a failure." Ex. E, § V, ¶ 36. To completely read out the "condition" limitation, as Defendants' proposed construction does, is both improper and would not provide a clear understanding of the implementation of the claimed invention. *Id.* Thus, this term should be afforded its plain and ordinary meaning. *Id.*

> 2.   **Term 2: "wherein: the first type SIB is re-acquired by the user equipment upon the user equipment failing on the SI message acquisition process in at least one of the SI windows to receive the SI message" (Claims 9, 13, '557 Patent")**

AWT's Proposed Construction	Defendants'/Intervenors' Proposed Construction
Plain and ordinary meaning.	Indefinite under § 112(b)

This claim term is present in both Claims 9 and 13 of the '557 Patent. A POSITA would find it evident that Claim 9 is an apparatus claim, which recites a "base station apparatus" while Claim 13 is a method claim, which recites a "method for a base station apparatus." *Id.*, ¶ 38. Nonetheless, while Plaintiff contends that it should be construed under the term's plain and ordinary meaning, Defendants contend that this term should be construed as indefinite under § 112(b) as improperly mixing claim types.

That Claim 9 recites functional language that further describes the re-acquisition of the first type SIB (*i.e.*, "the first type SIB is re-acquired by the user equipment upon the user equipment failing on the SI message acquisition process in at least one of the SI windows to receive the SI message") is of no moment because "apparatus claims are not necessarily indefinite for using functional language." *Microprocessor Enhancement Corp. v. Texas Instruments Inc.*, 520 F.3d 1367, 1375 (Fed. Cir. 2008). Claims are definite when they merely claim that the system 'possess[es] the recited structure [which is] capable of performing the recited functions.'" *MasterMine Software, Inc. v. Microsoft Corp.*, 874 F.3d 1307, 1316 (Fed. Cir. 2017) (quoting

Microprocessor Enhancement Corp., 520 F.3d at 1375 (alteration in original). Here, the claims directly specify the recited structure, which Defendants do not contest. Defendants also do not request a construction that the functional language is non-limiting and do not contend that a POSITA would not understand the claim language with reasonable certainty.

As the Federal Circuit noted in *MasterMine Software*, simply including verbs does not necessarily render a system claim indefinite as long as those "verbs represent permissible functional language used to describe capabilities of the [system limitation]." *Id.* Claim 9 explicitly recites "transmitting circuitry configured to transmit a first type system information block (SIB)." Ex. E, § V, ¶ 39. There is a subsequent claim limitation that further describes "the first type SIB" of the "transmitting circuitry" claim limitation. *Id.* A further description of "the first type SIB" disclosed in the "transmitting circuitry" claim limitation does not provide any confusion as to whether Claim 9 is an apparatus claim or whether the transmitting circuitry transmits an SIB for both acquisition or re-acquisition of the SIB at the user equipment. *Id.* Therefore, this term of Claim 9 simply further defines the capability of the claimed system's transmitting circuitry structure, which does not automatically result in a mixed-method-apparatus claim. *See UltimatePointer, L.L.C. v. Nintendo Co.,* 816 F.3d 816, 827 (Fed. Cir. 2016) ("Unlike *IPXL* and similar cases, the claims at issue here make clear that the 'generating data' limitation reflects the capability of that structure rather than the activities of the user.").

The specification confirms this understanding that the base station's transmitting circuitry merely transmits the SIB again during a reacquisition process because a POSITA would have understood the use of the parenthetical "(re)" to indicate that the acquisition of the SIB involves the same transmission process with the same components, but merely in a different context (*e.g.,* re-transmitting SIB upon detection of failure of the SI message acquisition process):

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> Upon detection of failure of the SI message acquisition process, as act **14-4** the terminal processor **40** initiates (re)acquisition of the first type system information, e.g., the MINIMAL SI or SIB1, as shown by arrow **12-4** in FIG. 12. The wireless terminal **26(12)** thus attempts to again acquire the first type system information, in hopes that the SI message acquisition process can thereafter be repeated and perhaps in such repeat of the SI message acquisition process the requested SI message will be obtained. In an example implementation, the wireless terminal **26(12)** may optionally reacquire MIB prior to reacquisition of SIB1. Accordingly, not having a valid version of a stored SIB, upon detection of failure of the SI message acquisition process, the terminal processor **40** initiates (re)acquisition of the first type system information.

Ex. E, § V, ¶ 40 (citing Ex. B, 15:47-61).

Claim 9 also recites that "the base station apparatus is a current serving access node of the user equipment." *Id.*, ¶ 41. As indicated in Fig. 14 below, a POSITA would have understood that the same "access node" (*i.e.*, base station apparatus) and transmitting circuitry therein would have both transmitted the initial SIB1, as well as SIB1 for the purposes of UE reacquisition:
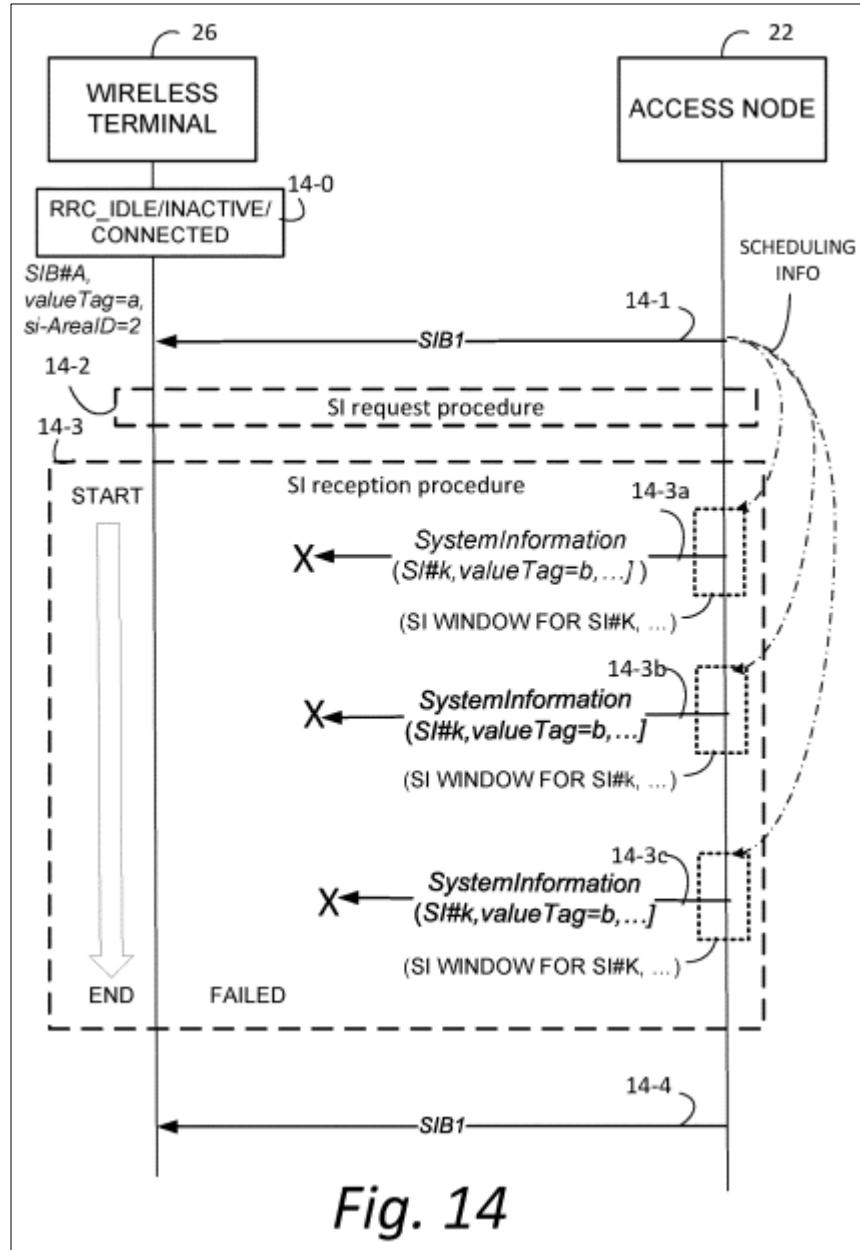
Fig. 14

Id. (citing Ex. B, Fig. 14).

Claim 13, the corresponding method claim to Claim 9, similarly describes "transmitting a first type system information block (SIB)," "wherein the first type SIB is re-acquired by the user equipment upon the user equipment failing on the SI message acquisition process in at least one of the SI windows to receive the SI message." *Id.*, ¶ 42. For the same reasons as Claim 9, the further description of "the first type SIB" from the "transmitting" claim limitation does not provide

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any confusion as to whether Claim 13 is a method claim. *Id.*

For the reasons above, a POSITA would have understood that the scope of "wherein: the first type SIB is re-acquired by the user equipment upon the user equipment failing on the SI message acquisition process in at least one of the SI windows to receive the SI message" is reasonably ascertainable without the need for further construction. *Id.*, ¶ 43. Therefore, the term should receive its plain and ordinary meaning because when "[t]he scope of a claim would be reasonably ascertainable by those skilled in the art, then the claim is not indefinite." *Bose Corp. v. JBL, Inc.*, 274 F.3d 1354, 1359 (Fed. Cir. 2001).

B.   '566 Patent

1.   Term 3: "the frequency hopping" (Claims 8, 16, '566 Patent")

AWT's Proposed Construction	Defendants'/Intervenors' Proposed Construction
[a] frequency hopping	Indefinite under § 112(b)

While Defendants contend that the recitation of "***the*** frequency hopping" renders this claim term indefinite for lack of antecedent basis, a POSITA would understand the scope of this term with reasonable certainty without the need for further construction. The use of "the" does not render this claim indefinite because if "[t]he scope of a claim would be reasonably ascertainable by those skilled in the art, then the claim is not indefinite." *Bose Corp.*, 274 F.3d at 1359; *see also Energizer Holdings, Inc. v. Int'l Trade Comm'n*, 435 F.3d 1366, 1371 (Fed. Cir. 2006) ("A claim that is amenable to construction is not invalid on the ground of indefiniteness.").

Claim 1 of the '566 Patent is an apparatus claim directed toward a "user equipment (UE)" that includes "instructions stored in [] memory [that are] executable to" "determine ***a method of frequency hopping*** for the configured multiple slots PUCCH" and "transmit[ting] uplink control information (UCI) with the frequency hopping." Ex. E, § V, ¶ 47; Ex. D, Claim 1. Claim 1's

recitation of "a method of frequency hopping" implies that there is frequency hopping inherent in the claimed invention and the apparatus of Claim 1 is merely determining the precise method of *the* frequency hopping. A POSITA would have understood that Claim 8's recitation of "receiv[ing] uplink control information (UCI) with the frequency hopping for the configured multiple slots PUCCH" is consistent with the determination of a method of frequency hopping in Claim 1, and specifically corresponds to the UE's transmission of UCI with frequency hopping, as described in Claim 1. Ex. E, § V, ¶ 47.

However, even without Claim 1, a POSITA would have readily understood that Claim 8 covers the embodiments of the '566 Patent where a base station receives UCI from a UE with a frequency hopping method, as per the explicit claim limitation of "receiv[ing] uplink control information (UCI) with [] frequency hopping for the configured multiple slots PUCCH." *Id.* Claim 8 itself recites that "an uplink control channel (PUCCH) spans over multiple slots" and "receive uplink control information (UCI) with the ***frequency hopping for the configured multiple slots PUCCH***," indicating unequivocally that frequency hopping is configured. *Id.*, ¶ 45; Ex. D, Claim 8 (emphasis added).

A POSITA would have understood the term "frequency hopping" as used in Claim 8, to be inherent in the configured multiple slots PUCCH, regardless of whether "the" precedes "frequency hopping" in the claim. Ex. E, § V, ¶ 45. As Plaintiff's expert explained, a POSITA would understand that "[d]uring the process of communications we have a certain amount of bandwidth and that bandwidth we typically break down into subsets [or] channels in different frequencies." Ex. F, 29:22-30:1. "[F]requency hopping was done so that we could hop from one frequency to another either because it was a better channel to transmit on, or because we had additional capacity we needed and we could hop to a wider bandwidth." *Id.*, 30:5-9. In other words, "[f]requency hop

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would be the actual hopping between the frequencies," which the parties do not seem to dispute. *Id.*, 30:21-22. A POSITA would certainly have this understanding because frequency hopping "has been pretty much inherent in all of our latest and greatest technologies, and this dates back even back to before the 2G series" and is "inherent [] in our cellular networks." *Id.*, 30:2-17.

The '566 Patent specification confirms that frequency hopping is inherent when different PUCCH regions are configured. Ex. E, § V, ¶ 46. While DMRS (demodulation reference signal) patterns may (or may not) be used to determine whether frequency hopping can be supported (*i.e.*, whether there are different frequencies to hop to), the specification makes clear that the '566 Patent claims those embodiments which do support frequency hopping, because "[f]requency hopping is a key feature for PUCCH to provide frequency diversity":

> Frequency hopping is a key feature for PUCCH to provide frequency diversity. If configured, the PUCCH symbols can be transmitted at different PUCCH regions. For a long PUCCH duration in a slot, only 1 hop is supported. Whether frequency hopping can be supported or not may be determined by the DMRS patterns, and vice versa.

Id. (citing Ex. D, 17:5-10).

Moreover, the '566 Patent specification is replete with references to frequency hopping, and specifically to frequency hopping related to uplink control information (UCI) spanning over multiple slots received from a base station's perspective. *Id.*, ¶ 48. For example, as described below, a POSITA would clearly understand that a frequency hopping of the received UCI spanning multiple slots (PUCCH) is inherent in view of the base station's ability to receive UCI from a UE with a frequency hopping (as noted above), as well as the base station's ability to "determine a frequency hopping method of the configured multi-slot PUCCH" from that received UCI:

> A base station (gNB) is also described. The gNB includes a processor and memory in electronic communication with the processor. Instructions stored in the memory are executable to

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> determine an uplink control channel (PUCCH) spans over multiple slots. The instructions are also executable to determine a demodulation reference signals (DMRS) structure in the configured multi-slot PUCCH. The instructions are further executable to determine a frequency hopping method of the configured multi-slot PUCCH. The instructions are additionally executable to determine UCI encoding and loading methods on the configured multi-slot PUCCH. The instructions are also executable to determine a resource of a control channel for UCI feedback. The instructions are further executable to receive UCI on a selected channel.

Id. (citing Ex. D, 3:38-51).

Because a POSITA would have understood that it is evident from Claim 8 that frequency hopping is an inherent feature of the claimed invention and would have been readily able to define "frequency hopping" as written in the claim, a POSITA would not have required antecedent basis of "frequency hopping" earlier in Claim 8 to understand the recited "***the*** frequency hopping." *Id.*

Claim 16 is the corresponding method claim to Claim 8 and, therefore, the same reasons above as to why a POSITA would understand "the frequency hopping" to be construed as "frequency hopping" or "a frequency hopping" apply to Claim 16. *Id.*, ¶ 49.

As shown above, the context in which this claim term appears both in the claim language and the specification allows a POSITA to understand the scope of this claim term. Defendants have not presented any intrinsic or extrinsic evidence indicating that the term "frequency hopping" itself is indefinite outside of its non-persuasive antecedent basis challenge. Accordingly, "the frequency hopping" is sufficiently definite in view of the claims and specification. *See Phillips v. AWH Corp.*, 415 F.3d 1303, 1321 ("[T]he specification is 'the single best guide to the meaning of a disputed term,' and that the specification 'acts a dictionary when it expressly defines terms used in the claims or when it defines terms by implication.'").

V.   CONCLUSION

For all the foregoing reasons, AWT respectfully requests that the Court adopt AWT's proposed constructions.

Dated: August 5, 2024   Respectfully submitted,

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CERTIFICATE OF SERVICE

The undersigned hereby certifies that all counsel of record who are deemed to have consented to electronic service are being served with a copy of this document via the Court's CM/ECF system per Local Rule CV-5(a)(3) on August 5, 2024.

/s/ Vincent J. Rubino, III
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